

Commonwealth of Massachusetts
Department of Telecommunications and Energy
Fitchburg Gas and Electric Light Company
Docket Nos. D.T.E. 02-24/25
Responses to the Department's Sixth Set of Information Requests

Request No. DTE 6-34 (Gas):

Please provide a copy of the purchased gas lead-lag study submitted to the Department by the Company in D.T.E. 98-51. Provide all supporting calculations and worksheets in a format identical to that of the purchase gas lead-lag study presented in Exh. MHC-4 (Gas).

Response:

Attachment DTE 6-34 is the schedule filed in D.T.E. 98-51 (Schedule FGE-LMB-29) and supporting papers. The two studies are not directly comparable as different methodologies were utilized in each, with a more comprehensive analysis calculated for this proceeding (D.T.E. 02-24). In addition, the FG&E believes that it is an improvement over the prior methodology and new and more accurate billing systems were in place for the current Study as compared to the use of split data sources from two different billing systems in D.T.E. 98-51. FG&E decided to use for its current filing substantially the methodology used by Berkshire Gas Company in D.T.E. 01-56, filed on July 17, 2001. This methodology was utilized in D.T.E. 02-24 as the Department has determined that this methodology is in accordance with Department precedent.

Person Responsible: Mark H. Collin

Schedule FGE-LMB-29

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Fitchburg Gas & Electric Light Company

**Lead Lag Study
Calculation of Net Lag Days
Purchased Gas Expense**

Total Lag Days Revenues	44.3
Total Lag Day Gas Supply	<u>37.5</u>
Net Lag	<u>6.8</u>

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Fitchburg Gas & Electric Light Company
Lead Lag Study
Calculation of Lag Days
Computer Billed Customers

<u>Number of Days From:</u>					<u>Total Gas Receivables</u>	<u>Weighted Lag Days</u>
<u>Month</u>	<u>Service to Meter Read</u>	<u>Read to Bill</u>	<u>Bill to Collect</u>	<u>Total Lag Days</u>		
	(1)	(2)	(3)	(4)=(3+2+1)	(5)	(6)=(4x5)
January	15.7	3.0	25.9	44.6	\$2,442,979	108,921,964
February	14.9	2.8	25.9	43.6	2,682,990	116,940,036
March	15.3	2.8	25.9	44.0	2,489,932	109,521,438
April	15.3	3.2	25.9	44.4	2,449,002	108,700,703
May	15.0	3.0	25.9	43.9	2,352,418	103,237,529
June	15.1	2.7	33.7	51.5	1,534,817	79,043,061
July	15.8	5.4	29.3	50.5	1,169,559	59,062,748
August	15.1	4.8	26.7	46.6	950,242	44,281,300
September	15.2	4.4	25.7	45.3	771,480	34,948,056
October	15.7	4.0	23.6	43.3	1,072,913	46,457,128
November	14.7	5.1	23.0	42.8	1,388,203	59,415,102
December	<u>15.3</u>	<u>4.6</u>	<u>19.2</u>	<u>39.1</u>	<u>2,208,901</u>	<u>86,368,013</u>
Total System	15.3	3.8	25.9	44.5	\$21,513,436	956,897,078
Off-System				<u>42.2</u>	<u>1,886,045</u>	<u>79,563,950</u>
Total Gas				<u>44.3</u>	23,399,481	1,036,461,028

Notes:

- (1) The average number of days from service to meter read was calculated by determining the number of days in each billing cycle and dividing by 2, for each month during the test year.
- (2) The average number of days from the meter read date to when the bill was generated was determined by summing the number of days variance for each account, and dividing by the number of billed accounts. All accounts for which the lag was more than two weeks were excluded from this calculation.
- (3) The average number of days from the billing date to when the bill was paid was determined by summing the number of days variance for each account, and dividing by the number of billed accounts. All accounts for which the lag was more than two weeks were excluded from this calculation. This specific payment detail was not kept in the legacy system. As a result, data for January through May has been estimated. In place of the actual monthly average for those months the average for June through December was used.
- (4) Total lag days is the sum of columns 1, 2 and 3. The Total for column (4), is arrived at by dividing the total from column (6) by the total from column (5).
- (5) Total gas receivables for the months of May through December come directly from the month-end trial balance and are the sum of all gas receivable codes. Because this level of detail was not maintained in the Legacy system, the months of January through April were estimated by multiplying the total receivables (gas and electric) by the gas allocation factor, 30.25%. This factor is used to allocate costs and expenses between gas and electric services when a more precise method is unavailable.
- (6) Column (4) times column (5).

Fitchburg Gas & Electric Light Company

Lead Lag Study
Calculation of Lag Days
Manually Billed Off-System Customers

<u>Customer</u>	<u>Amount of Sale</u> (1)	<u>Payment Date</u> (2)	<u>Lag Days</u> (3)	<u>Weighted Lag Days</u> (4)
1 General Electric Company	\$234,867	Various	48.6	11,420,416
2 Simonds	13,213	"	45.5	601,194
3 Simplex Time Recorder	103,364	"	41.5	4,293,897
4 New England Woodenware	151,072	"	42.5	6,426,858
5 Wachusett Potato Chip, Inc.	192,470	"	36.0	6,936,933
6 FOLLC- (Northeast Recycling)	593,097	"	39.3	23,300,244
7 PWA Decor, Inc.	<u>597,962</u>	"	<u>44.5</u>	<u>26,584,408</u>
Total	<u>\$1,886,045</u>	<u>NA</u>	<u>42.2</u>	<u>79,563,950</u>

Cycle	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Oct-97	Nov-97	Dec-97	
1	30	32	30	29	30	31	30	31	32	31	31	31	
2	30	32	30	29	30	31	30	33	30	29	30	29	
3	32	30	30	29	32	29	30	33	30	29	30	29	
4	32	30	30	29	32	29	30	30	30	31	30	29	
5	30	30	30	31	30	29	30	30	32	31	30	29	
6	30	30	31	31	30	29	30	30	32	31	30	31	
7	30	31	31	31	30	31	31	32	30	29	28	29	
8	30	31	31	31	32	31	31	32	30	29	29	29	
9	31	30	31	31	29	30	33	30	30	32	30	31	
10	31	30	31	31	29	30	33	30	29	31	29	29	
11	30	30	30	31	29	30	33	30	30	31	29	31	
12	30	32	31	31	29	32	31	30	30	31	29	31	
13	30	32	31	30	29	32	31	31	30	33	30	30	
14	33	29	31	30	30	30	33	29	28	31	28	30	
15	33	29	31	32	29	30	33	29	28	31	30	29	
16	33	29	31	30	29	30	33	29	32	33	30	32	
17	32	29	30	30	29	32	31	29	32	33	27	32	
18	34	28	30	30	29	32	31	31	30	33	28	32	
19	33	28	30	31	32	29	33	29	30	33	29	32	
20	33	28	30	32	30	29	33	29	30	33	29	34	
21	31	28	31	30	30	31	31	29	32	33	31	32	
23	31	28	30	32	30	29	33	29	32	33	29	34	
Average	31.3	29.8	30.5	30.5	30.0	30.3	31.5	30.2	30.4	31.4	29.4	30.7	30.5
	15.7	14.9	15.3	15.3	15	15.1	15.8	15.1	15.2	15.7	14.7	15.3	15.3

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HEADINGS

	System		IG	Net - Standard
	<u>HTE *</u>	<u>Legacy</u>		<u>Billing</u>
<u>1997</u>	(1)	(2)	(3)	(4)=(1+2)-(3)
January	\$0.00	\$2,442,979.00		\$2,442,979.00
February	0.00	2,682,990.00		2,682,990.00
March	0.00	2,489,932.00		2,489,932.00
April	0.00	2,449,002.00		2,449,002.00
May	2,562,852.08	0.00		2,352,417.65
June	1,736,450.60	0.00		1,534,816.72
July	1,355,838.96	0.00		1,169,559.37
August	1,125,437.50	0.00		950,242.48
September	967,827.73	0.00		771,480.27
October	1,227,628.22	0.00		1,072,912.88
November	1,524,085.16	0.00		1,388,203.32
December	<u>2,428,992.78</u>	<u>0.00</u>		<u>2,208,900.59</u>
Total	<u>\$12,929,113.03</u>	<u>\$10,064,903.00</u>		<u>\$21,513,436.28</u>

<u>Month</u>	<u>Number of Customers</u>	<u>Total days between Bill and Read</u>	<u>Average Billing Lag</u>	<u>Total days between Pay and Bill</u>	<u>Average Payment Lag</u>	<u>Total Lag Days</u>
January	14,789	43,816	3.0		25.9	28.9
February	14,748	40,751	2.8		25.9	28.7
March	14,814	41,345	2.8		25.9	28.7
April	14,788	47,551	3.2		25.9	29.1
May	14,653	44,655	3.0		25.9	28.9
June	12,405	33,215	2.7	417,523	33.7	36.4
July	13,397	72,401	5.4	391,892	29.3	34.7
August	13,593	64,857	4.8	362,306	26.7	31.5
September	13,454	58,852	4.4	345,943	25.7	30.1
October	13,632	54,598	4.0	322,177	23.6	27.6
November	13,994	70,903	5.1	322,205	23.0	28.1
December	14,592	67,613	4.6	280,436	19.2	23.8
					25.9	30.3

HEADINGS

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March	0.00	2,489,932.00		2,489,932.00
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May	2,562,852.08	0.00		2,352,417.65
June	1,736,450.60	0.00		1,534,816.72
July	1,355,838.96	0.00		1,169,559.37
August	1,125,437.50	0.00		950,242.48
September	967,827.73	0.00		771,480.27
October	1,227,628.22	0.00		1,072,912.88
November	1,524,085.16	0.00		1,388,203.32
December	<u>2,428,992.78</u>	<u>0.00</u>		<u>2,208,900.59</u>
Total	<u>\$12,929,113.03</u>	<u>\$10,064,903.00</u>		<u>\$21,513,436.28</u>

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FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

**Lead Lag Study
Calculation of Lead Days
Gas Purchases**

See Note B below

(1)	(2)	(3)	(4)	(5)	(6)	(7)
JANUARY	1/15.5	AQUILA	\$262,517	2/25	39.5	\$10,369,422
		BOUNDARY	64,403	2/24	38.5	2,479,516
		CNG TRANSMISSION	1,521	2/10	24.5	37,265
		CNG TRANSMISSION	246	2/14	28.5	7,011
		DISTRIGAS	106,913	2/21	35.5	3,795,412
		EPEC MARKETING	207,607	2/25	39.5	8,200,477
		NATIONAL FUEL GAS SUPPLY	5,471	1/10	-6.5	-35,562
		NATIONAL FUEL GAS SUPPLY	305	2/25	39.5	12,048
		NATIONAL FUEL RESOURCES	67,735	3/7	49.5	3,352,883
		NATURAL GAS CLEARINGHOU	262,820	2/25	39.5	10,381,390
		TENN GAS PIPELINE	338,270	2/25	39.5	13,361,665
		UNION PACIFIC FUELS	230,659	2/20	34.5	7,957,736
FEBRUAR	2/14	AQUILA	140,772	3/25	38.0	5,349,336
		BOUNDARY	54,107	3/24	37.0	2,001,959
		CNG TRANSMISSION	1,522	3/11	24.0	36,528
		CNG TRANSMISSION	213	3/20	33.0	7,029
		CO-ENERGY TRADING CO	5,600	3/28	41.0	229,600
		DISTRIGAS	25,833	3/21	34.0	878,322
		EPEC MARKETING	147,455	3/25	38.0	5,603,290
		NATIONAL FUEL GAS SUPPLY	189	3/20	33.0	6,237
		NATIONAL FUEL RESOURCES	44,436	3/24	37.0	1,644,132
		NATURAL GAS CLEARINGHOU	172,701	3/25	38.0	6,562,638
		SONAT MARKETING CO	13,800	3/21	34.0	469,200
		TENN GAS PIPELINE	328,318	3/25	38.0	12,476,084
		UNION PACIFIC FUELS	136,112	3/20	33.0	4,491,696
		WICKFORD ENERGY	13,681	3/21	34.0	465,154
MARCH	3/15.5	AQUILA	114,855	4/25	39.5	4,536,773
		BOUNDARY	44,548	4/24	38.5	1,715,098
		CNG TRANSMISSION	1,522	4/9	23.5	35,767
		CNG TRANSMISSION	188	4/18	32.5	6,110
		COASTAL GAS	19,600	5/2	46.5	911,400
		DISTRIGAS	28,336	4/18	32.5	920,920
		EPEC MARKETING	89,844	4/25	39.5	3,548,838
		NATIONAL FUEL GAS SUPPLY	95	4/18	32.5	3,088
		NATIONAL FUEL GAS SUPPLY	5,471	3/11	-5.5	-30,091

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Lead Lag Study
Calculation of Lead Days
Gas Purchases

(1)	(2)	(3)	(4)	(5)	(6)	(7)
MARCH	3/15.5	NATIONAL FUEL RESOURCES	31,087	5/20	64.5	2,005,112
		NATURAL GAS CLEARINGHOU	87,345	4/25	39.5	3,450,128
		SONAT MARKETING CO	23,634	4/18	32.5	768,105
		TENN GAS PIPELINE	290,098	4/25	39.5	11,458,871
		TEXACO NATURAL GAS	61,632	4/18	32.5	2,003,040
		UNION PACIFIC FUELS	141,216	4/18	32.5	4,589,520
		WESTERN GAS MARKETING	71,145	4/25	39.5	2,810,228
		WICKFORD ENERGY	13,400	4/18	32.5	435,500
APRIL	4/15	AQUILA	76,213	5/23	37.0	2,819,881
		BOUNDARY	36,730	5/23	37.0	1,359,010
		CNG TRANSMISSION	1,522	5/14	28.0	42,616
		CNG TRANSMISSION	157	5/15	29.0	4,553
		COASTAL GAS	15,204	5/29	43.0	653,772
		DISTRIGAS	25,833	5/23	37.0	955,821
		EPEC MARKETING	91,113	5/23	37.0	3,371,181
		NATIONAL FUEL GAS SUPPLY	5,471	4/9	-7.0	-38,297
		NATIONAL FUEL GAS SUPPLY	42	5/23	37.0	1,554
		NATURAL GAS CLEARINGHOU	76,706	5/23	37.0	2,838,122
		QST ENERGY TRADING	6,023	5/23	37.0	222,851
		SELKIRK COGEN	8,480	5/23	37.0	313,760
		SONAT MARKETING CO	30,620	5/23	37.0	1,132,940
		TENN GAS PIPELINE	289,076	5/29	43.0	12,430,268
		TENN GAS PIPELINE	1,638	6/4	49.0	80,262
		TEXACO NATURAL GAS	4,720	5/21	35.0	165,200
		TPG CORP	19,276	5/29	43.0	828,868
		UNION PACIFIC FUELS	167,513	5/16	30.0	5,025,390
		WESTERN GAS MARKETING	12,868	5/23	37.0	476,116
		WICKFORD ENERGY	22,686	5/22	36.0	816,696
MAY	5/15.5	AQUILA	88,696	6/25	39.5	3,503,492
		BOUNDARY	39,628	6/24	38.5	1,525,678
		CNG TRANSMISSION	1,522	6/10	24.5	37,289
		CNG TRANSMISSION	180	6/12	26.5	4,770
		COASTAL GAS	36,318	6/20	34.5	1,252,971

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FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

Lead Lag Study
Calculation of Lead Days
Gas Purchases

(1)	(2)	(3)	(4)	(5)	(6)	(7)
MAY (CONT	5/15.5	CO-ENERGY TRADING CO	11,615	6/25	39.5	458,793
		DISTRIGAS	2,473	6/20	34.5	85,319
		EPEC MARKETING	127,304	6/25	39.5	5,028,508
		NATIONAL FUEL GAS SUPPLY	5,471	5/10	-6.5	-35,562
		NATIONAL FUEL GAS SUPPLY	186	6/25	39.5	7,347
		NATURAL GAS CLEARINGHOU	89,765	6/25	39.5	3,545,718
		QST ENERGY TRADING	6,023	6/25	39.5	237,909
		SONAT MARKETING CO	39,564	6/26	40.5	1,602,342
		TENN GAS PIPELINE	206,055	6/20	34.5	7,108,898
		UNION PACIFIC FUELS	195,280	6/20	34.5	6,737,160
		WESTERN GAS MARKETING	2,390	6/25	39.5	94,405
		WICKFORD ENERGY	9,651	6/20	34.5	332,960
JUNE	6/15	AQUILA	94,193	7/25	39.0	3,673,527
		BOUNDARY	40,128	7/24	38.0	1,524,864
		CNG TRANSMISSION	1,697	7/10	24.0	40,728
		ENGAGE ENERGY	15,667	7/18	32.0	501,344
		DISTRIGAS	2,570	7/31	45.0	115,650
		EPEC MARKETING	115,407	7/25	39.0	4,500,873
		NATIONAL FUEL GAS SUPPLY	170	7/23	37.0	6,290
		NATIONAL FUEL GAS SUPPLY	5,471	6/10	-6.0	-32,826
		NATURAL GAS CLEARINGHOU	95,418	7/25	39.0	3,721,302
		QST ENERGY TRADING	3,037	7/21	35.0	106,295
		TENN GAS PIPELINE	233,506	7/25	39.0	9,106,734
		UNION PACIFIC FUELS	185,471	7/18	32.0	5,935,072
		WICKFORD ENERGY	19,832	7/24	38.0	753,616
JULY	7/15.5	AQUILA	90,087	8/25	39.5	3,558,437
		BOUNDARY	39,319	8/22	36.5	1,435,144
		CNG TRANSMISSION	1,702	8/14	28.5	48,507
		EPEC MARKETING	110,617	8/25	39.5	4,369,372
		NATIONAL FUEL GAS SUPPLY	5,471	7/10	-6.5	-35,562
		NATIONAL FUEL GAS SUPPLY	164	8/22	36.5	5,986
		NATURAL GAS CLEARINGHOU	91,065	8/25	39.5	3,597,068

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FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

Lead Lag Study
Calculation of Lead Days
Gas Purchases

(1)	(2)	(3)	(4)	(5)	(6)	(7)
JULY (CON	7/15.5	TENN GAS PIPELINE	241,842	8/22	36.5	8,827,233
		UNION PACIFIC FUELS	172,086	8/20	34.5	5,936,967
AUGUST	8/15.5	AQUILA	91,816	9/25	39.5	3,626,732
		BOUNDARY	39,882	9/24	38.5	1,535,457
		CNG TRANSMISSION	1,671	9/12	26.5	44,282
		DISTRIGAS	2,643	9/26	40.5	107,042
		EPEC MARKETING	111,838	9/25	39.5	4,417,601
		NATIONAL FUEL GAS SUPPLY	11,059	9/18	32.5	359,418
		NATURAL GAS CLEARINGHOU	92,018	9/25	39.5	3,634,711
		TENN GAS PIPELINE	224,780	9/23	37.5	8,429,250
		UNION PACIFIC FUELS	141,448	9/20	34.5	4,879,956
SEPTEMB	9/15	AQUILA	102,941	10/24	38.0	3,911,758
		BOUNDARY	41,100	10/23	37.0	1,520,700
		CNG TRANSMISSION	1,522	10/14	28.0	42,616
		CNG TRANSMISSION	147	10/16	30.0	4,410
		NATURAL GAS CLEARINGHOU	103,783	10/24	38.0	3,943,754
		EPEC MARKETING	126,376	10/24	38.0	4,802,288
		TENN GAS PIPELINE	234,750	10/24	38.0	8,920,500
		UNION PACIFIC FUELS	156,708	10/20	34.0	5,328,072
OCTOBER	10/15.5	AQUILA	130,138	11/25	39.5	5,140,451
		BOUNDARY	45,951	11/28	42.5	1,952,918
		CNG TRANSMISSION	1,535	11/13	27.5	42,213
		CNG TRANSMISSION	86	11/18	32.5	2,795
		DISTRIGAS	12,417	11/26	40.5	502,889
		EPEC MARKETING	159,818	11/25	39.5	6,312,811
		NATIONAL FUEL GAS SUPPLY	5,471	10/14	-2.5	-13,678
		NATIONAL FUEL GAS SUPPLY	142	10/23	7.5	1,065
		NATURAL GAS CLEARINGHOU	132,641	11/25	39.5	5,239,320
		TENN GAS PIPELINE	243,667	11/25	39.5	9,624,847
		TEXACO NATURAL GAS	29,000	11/21	35.5	1,029,500
		UNION PACIFIC FUELS	255,605	11/20	34.5	8,818,373

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**Lead Lag Study
Calculation of Lead Days
Gas Purchases**

(1)	(2)	(3)	(4)	(5)	(6)	(7)
NOVEMBE 11/15	AQUILA		203,997	12/24	38.0	7,751,886
	BOUNDARY		55,017	12/23	37.0	2,035,629
	CNG TRANSMISSION		1,537	12/10	24.0	36,888
	CNG TRANSMISSION		225	12/16	30.0	6,750
	DISTRIGAS		26,040	12/19	33.0	859,320
	ENGAGE ENERGY		166,722	12/24	38.0	6,335,436
	NATURAL GAS CLEARINGHOU		212,362	12/24	38.0	8,069,756
	NATIONAL FUEL GAS SUPPLY		5,471	11/13	-3.0	-16,413
	TENN GAS PIPELINE		257,777	12/22	36.0	9,279,972
	UNION PACIFIC FUELS		251,711	12/19	33.0	8,306,463
	WESTERN GAS MARKETING		86,438	12/24	38.0	3,284,644
	WICKFORD ENERGY		55,800	12/19	33.0	1,841,400
DECEMBE 12/15.5	AQUILA		167,012	1/26	40.5	6,763,986
	BOUNDARY		44,015	1/23	37.5	1,650,563
	CNG TRANSMISSION		277	1/23	37.5	10,388
	CNG TRANSMISSION		1,537	1/14	28.5	43,805
	DISTRIGAS		34,943	1/23	37.5	1,310,363
	ENGAGE ENERGY		148,723	1/23	37.5	5,577,113
	NATURAL GAS CLEARINGHOU		167,692	1/23	37.5	6,288,450
	NATIONAL FUEL GAS SUPPLY		5,553	12/13	-3.5	-19,436
	TENN GAS PIPELINE		267,542	1/26	40.5	10,835,451
	UNION PACIFIC FUELS		207,264	1/20	34.5	7,150,608
	WESTERN GAS RESOURCES		37,814	1/26	40.5	1,531,467
	WICKFORD ENERGY		62,477	1/23	37.5	2,342,888
			<u>\$11,945,053</u>		<u>37.5 (A)</u>	<u>\$447,473,469</u>

(A) Weighted Average Lead Days

(B) Gas Purchases, above, include billings for transportation, reservations and storage costs incurred during 1997. No adjustments for inventories.